

ABSTRACT OF THE DISCLOSURE

During continuous casting of metals, a non-moving, vibrating magnetic field is applied to a molten metal in a casting mold to impose only vibration on the molten metal. This continuous casting method can produce a cast slab much less susceptible to flux entrainment, capture of bubbles and non-metal inclusions near the surface of the molten metal, and surface segregation. The magnetic field is preferably produced by arranging electromagnets in an opposing relation on both sides of the mold to lie side by side in the direction of longitudinal width of the mold, and supplying a single-phase AC current to each coil. The single-phase AC current preferably has frequency of 0.10 to 60 Hz. A static magnetic field can be applied intermittently in the direction of thickness of a cast slab.

This technique can produce a cast slab substantially free from the flux entrainment and the surface segregation. Preferably, the static magnetic field is intermittently applied under setting of an on-time $t_1 = 0.10$ to 30 seconds and an off-time $t_0 = 0.10$ to 30 seconds. Also, the static magnetic field is preferably applied to the surface of the molten metal.